



NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
400 MARYLAND AVENUE, SW, WASHINGTON 25, D.C.
TELEPHONES: WORTH 2-4155 — WORTH 3-6925

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**RELAY SATELLITE TRANSMITS 'BRAIN WAVES' FROM ENGLAND
TO
MAYO CLINIC**

RELAY, the National Aeronautics and Space Administration's highly successful communications satellite, was used today to transmit electroencephalograms, "brain waves", from Bristol, England, to Minneapolis, Minnesota.

The demonstration was conducted Thursday between 4:45 and 5:00 p.m., EST by transmitting electroencephalograms from the Burden Neurological Institute in England via land line to the British transmission station at Goonhilly, to RELAY and back down to the receiving station at Nutley, N.J. and by land line to Minneapolis. There the signal was fed into a computer which printed out data from which a diagnosis was made. Results were immediately--within one minute--interpreted and sent back to England.

However, the brain wave signal was so weak and at such a low frequency (from 1 to 50 cycles per second) that it was applied to a 1750 cps "carrier" signal in order to traverse the tremendous distance involved. At the end of the journey the 1 to 50 cps brain signal was separated from the carrier and fed into the computer.

The demonstration was carried out under the supervision of Dr. Reginald G. Bickford of the Mayo Clinic, Rochester, Minnesota. Participating with him from Bristol was an associate, Dr. Charles Ray, also of Mayo, and Dr. W. Grey Walter of the Burden Neurological Institute. The demonstration was part of activities connected with a meeting of the National Academy of Neurology being held in Minneapolis.

Dr. Bickford said the process has never been tested via satellite. He said that this test may very well point the way to a more widespread use of this method of processing medical data of many kinds. He indicated that it would be an especially desirable method of processing data from countries that do not have facilities such as those available in Britain, the United States, and other technologically advanced countries.

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A person with normal brain waves was used in the test. Dr. Bickford said with the combination of satellite transmission and computer analysis it is possible to diagnose over long distances brain disorders and determine which part of the brain is affected. In underdeveloped countries this would be extremely valuable information that could not be obtained any other way, barring a trip by the patient. In advanced countries, expert neurological consultation will be quickly exchanged.

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